

400 Chestnut Street Tower II

July 7, 1981

OFFICIAL COPY

WBRD-50-390/81-13
WBRD-50-391/81-12

Mr. James P. O'Reilly, Director
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Region II - Suite 3100
101 Marietta Street
Atlanta, Georgia 30303



Dear Mr. O'Reilly:

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2 - FAILURE OF THE GENERATOR SYSTEM TO
SUPPLY ADEQUATE VOLTAGE TO THE SAFETY-RELATED BOARDS - WBRD-50-390/81-13,
WBRD-50-391/81-12 - THIRD INTERIM REPORT

The subject deficiency was initially reported to NRC-OIE Inspector
M. Thomas on January 5, 1981 in accordance with 10 CFR 50.55(e) as
NCR WBN EEB 8009. Interim reports were submitted on February 4 and
April 13, 1981. Enclosed is our third interim report. We expect to
submit our next report by October 15, 1981.

If you have any questions, please get in touch with D. L. Lambert at
FTS 857-2581.

Very truly yours,

TENNESSEE VALLEY AUTHORITY

L. M. Mills, Manager
Nuclear Regulation and Safety

Enclosure

cc: Mr. Victor Stella, Director (Enclosure)
Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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ENCLOSURE

WATTS BAR NUCLEAR PLANT UNITS 1 AND 2
FAILURE OF THE GENERATOR SYSTEM TO SUPPLY ADEQUATE VOLTAGE
TO THE SAFETY-RELATED BOARDS
WBRD-50-390/81-13, WBRD-50-391/81-12
10 CFR 50.55(e)
THIRD INTERIM REPORT

Description of Deficiency

When a reactor is tripped automatically for reasons other than an electrical fault or generator bearing failure, the main generator is not tripped for 30 seconds. During this time, the turbine stop valves are closed, and the generator is driven as a synchronous motor. The transfer of the safety boards to the preferred offsite supply is also delayed for 30 seconds. If the generator voltage regulator system failed to operate within its specified range during this delay period, inadequate voltage could be supplied to the 6900-volt shutdown boards following the unit trip. If this occurred, both trains of essential safety-related equipment supplied by the 6900-volt shutdown boards would be unable to meet the required response times stated in the safety analysis report.

Interim Progress

Depending on the final resolution of NCR WBN EEB 8006, "Auxiliary Power System," either one of the following corrective actions may be implemented to resolve this NCR.

1. Force the safety-related 6900-volt shutdown boards to fast transfer to the new common station service transformers for every reactor trip. This action eliminates the 30-second delayed transfer of the safety-related 6900-volt shutdown boards to the preferred offsite power supply.
2. Add a 1 out of 2 undervoltage detection scheme that would initiate a fast transfer of the 6900-volt unit boards (safety-related 6900-volt shutdown boards will transfer with the 6900-volt unit boards) if the reactor is tripped and the main generator breaker is closed. This action eliminates the 30-second delayed transfer of the 6900-volt unit boards only if the main generator voltage regulator system failed to operate within its specified range for the 30-second delay.